WHAT IS CLAIMED IS:

1. A single balanced mixer for converting an input RF signal to an IF (intermediate frequency) signal by mixing the input RF signal with a local signal, comprising:

means for producing two local signals of same amplitude and opposite phase;

a pair of mixing elements each receiving a corresponding one of the two local signals;

a pair of strip lines for transmitting the input RF signal to the mixing elements;

wherein one end of each of the strip lines is connected to one another at a point where the input RF signal is supplied and other end of each of the strip lines is connected to the corresponding mixing element, and wherein a length of each of the strip lines is one fourth of a wave length of the IF signal.

2. A single balanced mixer as defined in Claim 1, wherein the single balanced mixer is formed on a planar surface of a substrate, and the local signals of same amplitude and opposite phase are transmitted to the mixing elements through strip lines.

3. A single balanced mixer as defined in Claim 1, wherein the mixing elements produce the IF signals of same amplitude and opposite phase.

4. A single balanced mixer as defined in Claim 1, wherein each of the mixing elements is a transistor.

5. A single balanced mixer as defined in Claim 1, wherein each of the mixing elements is a diode.

6. A single balanced mixer for converting an input RF signal to an IF (intermediate frequency) signal by mixing the input RF signal with a local signal, comprising:

a first hybrid coupler for, upon receiving the local signal, producing two local signals of same amplitude and opposite phase;

a pair of mixing elements each receiving a

corresponding one of the two local signals from the first hybrid coupler;

a pair of λ/4 strip lines for transmitting the input RF signal to the mixing elements, one end of each of the λ/4 strip lines being connected to one another at a point where the input RF signal is supplied and other end of each of the λ/4 strip lines being connected to the corresponding mixing element;

a pair of IF filters for filtering the IF signals of opposite phase produced at the mixing elements; and

a second hybrid coupler for combining the IF signals from the IF filters to produce the IF signal of same phase;

wherein a length of each of the λ/4 strip lines is one fourth of a wave length λ of the IF signal.

7. A single balanced mixer as defined in Claim 6, wherein the single balanced mixer is formed on a planar surface of a substrate, and the two local signals of same amplitude and opposite phase are transmitted to the mixing elements through strip lines.

8. A single balanced mixer as defined in Claim 6, wherein the single balanced mixer is formed on a planar surface of a substrate, and the two local signals of same amplitude and opposite phase are transmitted from the first hybrid coupler to the mixing elements through strip lines, and the IF signals of opposite phase are transmitted from the mixing elements to the IF filters through strip lines.

9. A single balanced mixer as defined in Claim 6, wherein each of the mixing elements is a transistor.

10. A single balanced mixer as defined in Claim 6, wherein each of the mixing elements is a diode.